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Social norms, gender identity, and high-earning wives' housework behavior in Japan: An identity economics framework

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ABSTRACT

This article takes an identity economics perspective to examine the housework behavior of Japanese wives of couples where both spouses work full-time, based on panel data from the Japanese Panel Survey of Consumers in 2000–2008. First, we show that Japanese wives are reluctant to reduce their housework time even when they out-earn their husbands. Second, there is no negative linear relationship between wives' absolute income and the time they allocate to unpaid work. Last, we find no evidence that low-earning wives reduce their time spent on housework more rapidly than high-earning wives in Japan.

Introduction

The degree to which couples share housework duties (hereinafter: the housework behavior of husbands and wives) has been widely investigated by experts in the fields of sociology and economics. Scholars have predominantly relied on two major frameworks, namely, economic exchange and gender display, and two key measures, the relative earnings share (RES) of the husband or wife and the wife's absolute income, to explain the division of domestic labor between a couple. In contrast to earlier treatments of this issue, the present study contributes to the body of knowledge on this topic by utilizing the perspective of identity economics to examine the housework behavior of Japanese wives in couples where both spouses work full-time (defined as at least 35 hours a week in a regular job).

In this study, four hypotheses on the housework behavior of high-earning wives in Japan are investigated, namely the economic-exchange hypothesis, the gender-display hypothesis, and two autonomy hypotheses (Gupta 2006, 2007, 2009; Killewald and Gough 2010). First, responding to Sullivan's (2011) criticism that few recent studies have used longitudinal data to analyze this topic, panel data for 2000–2008 from the Japanese Panel Survey of

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Consumers (JPSC; http://www.kakeiken.or.jp/en/JPSC/jpsc.html), conducted by the Institute for Research on Household Economics, are used herein. Second, wives' RES and absolute income are estimated simultaneously in the presented equations to consider Gupta's (2007, 2009) assertion that when this occurs, the former becomes insignificant and the latter shows significance. Last, following Killewald and Gough (2010), a spline function is incorporated into the estimated equation to consider differences in the speed at which wives' earnings may reduce the time they spend on household chores at different income levels.

Akerlof and Kranton's (2000) notion of identity economics incorporates identity explicitly into the utility function in order to explain various behaviors that standard economics cannot. The economic-exchange hypothesis with respect to income assumes that as their RES rises, husbands and wives reduce their housework time. The gender-display hypothesis, in contrast, asserts that working wives' housework time is expected to decline until a threshold is passed but then rise thereafter. In Japan, in spite of the Gender Equal Employment Opportunity Law enacted in 1987 and the rises in their RES, working wives still allocate much more time to household activities than do their husbands. This study aims to prove empirically that the gender-display model influences high-earning wives' housework behavior. From an identity economics point of view, gender display in housework is said to arise from losses in gender identity on the wives' side through cognitive dissonance in the social interactions between husbands and high-earning wives, who deviate more from women's behavioral norms as to market labor than do low-earning wives working part-time. In this regard, high-earning wives in Japan try to compensate for the decreases in their husbands' utility, as well as for their own gender, by playing the role of a "good wife." Because Japanese society is still heavily influenced by Confucianism, gender-role consciousness is deeply rooted in the country, as compared to Europe and the United States. According to the White Paper on Gender Equality published in 2013 by the Japanese Gender Equality Bureau Cabinet Office (2013), the proportion of supporters of gender traditionalism gradually declined until 2012, but then began to rise again. This trend confirms the pattern found herein: High-earning wives in Japan following traditional gender norms trade housework time with their husbands and spend time on household chores even though their high earnings would enable them to outsource much of this domestic work. Indeed, Ando (2011a) suggests that when husbands work shorter hours than their wives, most men choose to trade housework time with their wives independent of any loss of gender identity, whereas wives, who are assumed to lose their gender identity to a larger degree, are unlikely to pass over more of the housework burden to their husbands. Although they do not directly refer to gender-identity loss, some studies find that wives in Japan have traditional gender roles and attitudes, and that husbands have a smaller housework share

or fewer housework hours (Ando 2013; Kamo 1994; Matsuda 2004; Tsuya and Bumpass 2004).

A number of Japanese sociologists have examined the high amount of housework carried out by wives relative to their husbands, including time spent on childcare (Ishii-Kuntz 2004; Matsuda 2004, 2005, 2006; Matsuda and Suzuki 2002; Mizouchi 2006; Nagai 2001). However, most have explored the economic-exchange hypothesis, which incorporates only the linear term of the RES of husbands or wives. Fundamentally, the gender-display hypothesis has been used to explain the housework behavior of couples in European countries, Australia, and the United States (Bittman et al. 2003; Evertsson and Nermo 2004; Greenstein 2000; Gupta 2007, 2009; Gupta and Ash 2008; Kan 2008; Killewald and Gough 2010; Usdansky and Parker 2011). However, because Japan has a different cultural approach to the formation of gender identity, scholars must examine the gender-display hypothesis empirically. To the author's best knowledge, only Ando (2010, 2011a, 2011b, 2012–13a, 2012–13b) employs both models, gender-display and autonomy, in order to examine housework division among husbands and wives in Japan. However, Ando (2010, 2011b, 2012–13a, 2012–13b) draws contradictory conclusions, which arise by not taking account of the relationship between wives' RES and their absolute incomes in the estimated equations. Therefore, in an attempt to clarify the mixed findings, these hypotheses on the housework behavior of high-earning wives in Japan are investigated in this article with the methodological improvements mentioned above.

If the gender-display hypothesis is supported, it means that the gender norm "married women should not work full-time and earn as much as their husbands" still exists in Japanese society. On the contrary, if the economic-exchange or autonomy hypothesis is supported, other things being equal, rises in working wives' income enable them to reduce their housework time. Hence, policymakers should aim to increase the opportunities for women to be employed full-time even after childrearing, for example by eliminating the wage gap between the two genders. Thus, this study can contribute to advancing research on this subject not only in Japan but in other, culturally similar countries (e.g., South Korea).

Existing theories

The economic-exchange hypothesis assumes that husbands and wives would trade their housework time with their RES. For example, as the RES of wives increases, they decrease their housework time. Graphically, if we plotted wives' housework time on the y-axis and their RES on the x-axis, the resultant graph would be linear, with a positive intercept and a negative slope. A number of economists have aimed to explain housework behavior from

game-theoretic perspectives by using this so-called economic-exchange model (Lundberg and Pollak 1993, 1996; Manser and Brown 1980; McElroy and Horney 1981).

On the contrary, the gender-display model, initially proposed by Brines (1994), asserts that wives do decrease their housework time at first, but gradually become reluctant to abandon housework as their RES rises. Hence, once wives out-earn their husbands, they begin to undertake marginally more household chores.

The results of previous studies based on these two models, however, are inconsistent. For instance, Brines (1994), using data from wave 20 of the Panel Study of Income Dynamics (PSID; http://psidonline.isr.umich.edu), shows that the gender-display model explains the housework behavior of U.S. husbands, whereas the economic-exchange model accounts for that of their wives. Akerlof and Kranton (2000) investigate housework share by constructing an identity-based model of economic behavior. They show that although husbands undertake more housework as their work share decreases from 100 percent, when their work share drops below a certain level, they demonstrate reluctance to accept additional domestic chores. The authors explain this behavior from the viewpoint of the loss of identity on the part of husband and wife. Greenstein (2000), based on data derived from the 1987–1988 National Survey of Families and Households (http://www.ssc.wisc.edu/nsfh), confirms that gender-display theory influences the housework time of both husbands and wives when their shares of total housework are employed as a dependent variable. Bittman et al. (2003) find that the gender-display model accounts for the housework behavior of Australian wives and American husbands, whereas the economic-exchange model explains the housework share of American wives; however, neither model explains the behavior of Australian husbands. In the same vein, Evertsson and Nermo (2004) show that the gender-display model explains the behavior of American husbands and wives in certain years of their study period, while the economic-exchange model explains the behavior of Swedish couples for all years. However, Kan (2008) finds no evidence to support gender display in the housework behavior of couples when taking employment status into consideration independent of their gender.

Killewald and Gough (2010), using the 1976–2003 waves of the PSID, investigate the compensatory gender-display and autonomy models by restricting the sample to married or long-term cohabiting couples (<60 years) in which both spouses work full-time. The results of their cross-sectional and panel models demonstrate that the compensatory gender-display model accounts for wives' housework behavior. Usdansky and Parker (2011) restrict their sample to couples in which the wife is employed full-time and show that only wives without a college degree and with children at home rely on gender

display to determine housework share. For the case of Japanese husbands and wives, as noted in the Introduction, Ando (2011b, 2012–13a, 2012–13b) presents mixed findings.

The third model typically used to explain wives' housework behavior rather than that of husbands is the autonomy model. This model hypothesizes that wives' absolute earnings, not their RES, explain their housework behavior from two standpoints. Gupta (2006, 2007, 2009) challenges the practice of including RES as an independent variable when estimating the housework behavior of wives, arguing that their absolute income has a negative and statistically significant association with time spent on domestic work. Gupta (2007, 2009) shows that wives' absolute income eliminates the significance of their RES in the gender-display model and has a negative linear relationship with time allocated to domestic work (the autonomy hypothesis). In effect, this finding demonstrates that the income of married or cohabiting working women is negatively and significantly related to their housework hours, while their partners' incomes are negatively but insignificantly associated with housework time.

In line with the autonomy hypothesis, Killewald and Gough (2010), focusing on the fact that even high-earning wives spend much of their time on housework, point out that there inevitably remain some housework chores that cannot be easily outsourced by purchasing substitutes in the market. For example, some housework cannot appropriately be outsourced: Doing housework is associated with being a "good wife"; unlike dining out, housecleaning implies revealing a degree of privacy to domestic workers; some substitutes are difficult to forgo because of the high cost incurred; and husbands are reluctant to do housework (Killewald and Gough 2010). The authors find support for their hypothesis that the earnings of wives at the low end reduce more rapidly as compared with wives at the high end. In other words, there is a negative but nonlinear relationship between wives' absolute income and their time spent on domestic labor. Similarly, Killewald (2011), using the 2003, 2005, 2007, and 2009 waves of the Consumption and Activities Mail and the Health and Retirement Study Core surveys, finds a negative and significant relation between U.S. dual-earner married women's earnings and their time spent on household chores. Usdansky and Parker (2011) also show that wives' income is inversely and significantly related to their housework hours.

Theoretical framework

Model

This study uses identity economics (Akerlof and Kranton 2000), which introduces the concept of identity into the individual utility function in order to

explain why economic agents may display nonrational behavior, as shown in Equations (1) and (2):

$$U_j = U_j\left(a_j, a_{-j}, I_j\right) \tag{1}$$

$$I_j = I_j\left(a_j, a_{-j}; c_j, \varepsilon_j, P\right) \tag{2}$$

where U_j is person j's utility, I_j is j's identity or self-image, and a_j, a_{-j}, c_j, ε_j, and P are the vectors of j's actions, of others' actions, the social categories assigned to j, j's own given characteristics, and social prescriptions, respectively. Equation (1) means that j's utility depends on j's own actions as well as on the actions of others and on j's identity, and Equation (2) shows that j's identity depends not only on the actions of j and those of others but also on the behavioral norms of the social category assigned to j and the extent to which j's characteristics match them. Akerlof and Kranton (2000) claim that the utility function I_j provides the social status of a category, and that increases or decreases in utility derive from gains or losses in identity. For husbands, a social behavioral norm holds that a *man should work* or a *man should earn.* By contrast, one of the social behavioral norms for wives is that a *woman should do the housework.* Therefore, husbands' smaller work shares or RES violate their social norm, and thus their utility decreases through their loss in identity. When a wife sees her husband working less than she does, or when his work share is smaller than hers is, she loses her identity and does housework or undertakes a larger housework share in an attempt to restore her husband's identity and maximize their utility by conforming to their social norms.

Model specification

The theoretical framework used in this study fundamentally follows the models used by Gupta (2006, 2007, 2009) and Killewald and Gough (2010). First, Equation (3) is estimated to test the economic-exchange, gender-display, and Gupta's autonomy hypotheses:

$$Model\,I\;Y = \alpha_0 + \alpha_1 X + \alpha_2 X^2 + \alpha_3 H + \alpha_4 W + \beta Z + \varepsilon_1 \tag{3}$$

In addition to Equation (3), Model II in Equation (4) is estimated to test the economic-exchange, gender-display, and Killewald and Gough's autonomy hypotheses:

$$\begin{aligned} Model\,II\;Y = {} & \alpha_0 + \alpha_1 X + \alpha_2 X^2 + \alpha_3 H + \alpha_{51} SplineW_1 + \alpha_{52} SplineW_2 \\ & + \alpha_{53} SplineW_3 + \alpha_{54} SplineW_4 + \alpha_{55} SplineW_5 + \varepsilon_2 \end{aligned} \tag{4}$$

where Y is wives' housework time in minutes per day on weekdays allocated to domestic work including childcare, X is wives' RES, and H and W are the absolute earnings of husbands and wives, respectively. $SplineW_k$

($K = 1, 2, 3, 4, 5$) stands for a spline function where wives' annual earnings are divided into five intervals of ¥2 million at 2005 constant prices and each dot is connected by a linear function. For instance, $SplineW_1$ is the interval of wives' earnings of ¥2 million or less, $SplineW_2$ represents ¥2–4 million, $SplineW_3$ ¥4–6 million, $SplineW_4$ ¥6–8 million, and $SplineW_5$ ¥8 million or more. Z is a vector of the control variables, and ε_k ($k = 1$ and 2) is an error term. The expected sign of α_1 is negative for the economic-exchange hypothesis. For the gender-display hypothesis, the signs of α_1 and α_2 are negative and positive, respectively; α_2 represents the curvilinear effect, which reduces wives' marginal decreases in housework time as their RES marginally rises. The expected sign of α_3 is unknown, but it is assumed to be positive if the husband's "money talks" and negative if his absolute income is spent on purchasing goods and services in the market; α_4 is assumed to show a negative sign if the two autonomy hypotheses are true. In particular, when all four variables for each interval of a spline function show negative signs and meet the condition $\alpha_{51} < \alpha_{52} < \alpha_{53} < \alpha_{54} < \alpha_{55} < 0$, Killewald and Gough's autonomy hypothesis is supported.

Because it is assumed that wives' housework behavior is affected by time-invariant effects, such as their personal taste for housework, gender norms, and the extent to which they feel it appropriate to outsource some household chores, fixed-effects (FE) models are estimated for both equations. However, random-effects (RE) models are also estimated for these equations. To decide which model should be selected, the Hausman test is conducted.

Sample

The Institute for Research on Household Economics has conducted the JPSC since 1993. Cohort A consists of a group of 1,500 women aged between 24 and 34 in 1993. Cohort B, consisting of 500 women aged between 24 and 27, cohort C, consisting of 836 women aged between 24 and 29, and cohort D, consisting of 636 women aged between 24 and 28, were added to cohort A in 1997, 2003, and 2008, respectively. The sample is restricted to working married women of couples where both spouses were employed full-time and where neither husband nor wife changed their respective workplaces during the year, which makes it possible to increase the representation of high-earning husbands and wives. Respondents with missing values, those living apart from their spouses, and cases where either spouse was a student, retired, or unemployed were excluded from the sample. Consequently, the sample comprised 982 women aged 25–49 married to husbands aged between 23 and 59.[1]

Variables

Dependent and independent variables

The dependent variable in this study is wives' housework time in terms of minutes per day allocated to domestic work, including childcare. The independent variables are wives' RES and its squared term as well as the annual absolute incomes of husbands and wives. Absolute income consists of labor income from employers as well as nonlabor earnings, such as social security benefits, income from property, and so on. It should be noted that because the JPSC asks respondents to provide annual income for the previous year, absolute income in the following year is used.

Control variables

The control variables are work hours per day on weekdays, educational attainment, and age for both husband and wife. Other variables used are: number of children, whether the couple has no child, whether the youngest child is a preschooler or an elementary school student, whether the couple resides with the husband's or wife's mother, whether the couple resides with a daughter aged 20 years and above, whether the husband works full-time, and the size of the municipality in which the couple resides.

According to the time-availability hypothesis, the more time a spouse spends time on market labor, the less will he or she allocate to housework and the more the other spouse's housework time rises. Therefore, the expected signs of the coefficients of the work hours of husbands and wives are positive and negative, respectively.

Generally, husbands who have a higher educational attainment are considered highly egalitarian, meaning that they undertake housework and spend more of their time on it than husbands who have a lower education, which leads to the expectation that husbands raise their housework time while that of wives is reduced. By contrast, wives who have a higher educational attainment are assumed to have a higher consciousness of egalitarianism, thereby reducing their own housework hours and asking their husbands to participate in domestic work to a larger degree than previously. Following the definitions provided by the JPSC, 1 means junior high school, 2 vocational college and school (only for respondents who did not graduate from high school), 3 high school, 4 vocational college and school (only for respondents who graduated from high school), 5 junior college and technical college, 6 college, and 7 graduate institution.

With regard to age, it is commonly considered that the older the respondent, the less egalitarian he/she is and the more conservative with regard to traditional gender roles. This leads to the assumption that older husbands and those married to older wives spend relatively less time on household tasks, while older wives and those married to older husbands allocate more time to domestic chores.

In egalitarian societies, wives are likely to take responsibility for childrearing until the children no longer need to be supported or when there are more

children than the mother is able to support herself. The number of children is thus assumed to raise wives' housework time, especially that part of it spent on childrearing, and particularly when their youngest child is a preschooler or in elementary school. Childless wives, on the other hand, are assumed to allocate less time to domestic work. Therefore, the youngest child as a preschooler or an elementary school student is coded 1, and 0 otherwise, while no children is coded 1, and 0 otherwise. If the wife resides with her or her husband's mother or with a daughter, they could be a substitutable human resource for her, reducing her housework time. Thus, the wife residing with her or her husband's mother is coded 1, and 0 otherwise. Similarly, the wife residing with a daughter aged 20 years and above is coded 1, and 0 otherwise. With respect to husbands' employment status, wives married to husbands working full-time are not assumed to reduce the time they allocate to household chores by much compared to those married to husbands working part-time. Therefore, a wife married to a husband employed full-time is coded 1, and 0 otherwise. With regard to the size of the municipality in which the couple resides, the largest city is coded 3, a large city 2, and others 1. The variable is assumed to show a negative sign, because the larger the city size, the greater is the supply of goods and services that are substitutable for housework.

Empirical Results

Descriptive statistics

The descriptive statistics are presented in Table 1. The mean of wives' housework time per day (on a weekday) is 190.88 minutes. Husbands spend 613.72 minutes on paid work per day, on average, compared with 530.11 minutes per day for wives. In spite of their having the same employment status, the mean work times of husbands and wives are statistically significantly different at the 0.1 percent level. Similarly, the means of annual income at 2005 constant prices are also significantly different at the 0.1 percent level (¥5,521.8 thousand for husbands, and ¥3,825.8 thousand for wives). Thus, wives' RES is 0.40, on average. In contrast, mean educational attainment is similar for both spouses (4.27 for husbands vs. 4.31 for wives). In fact, there is no statistically significant difference even at the 10 percent level. Finally, the mean ages of husbands and wives are 39.30 and 37.13 years, respectively, which are significantly different.

The mean of the dummy variable for couples with no children is 0.26, which means that 74 percent of couples in the sample have children; however, the average number of children is 1.41, reflecting the low fertility rate in Japan. Of all couples, 28 percent and 34 percent have children aged 0–6 and 7–12, respectively, most of whom are preschoolers and/or elementary school students, while 38 percent have the mother of either husband or wife

Table 1. Descriptive statistics ($n = 982$).

Variable	*Min*	*Max*	*M*	*SD*
Wife's housework time on weekdays (minutes)	0.000	570.000	190.876	97.590
Husband's work time on weekdays (minutes)	120.000	1320.000	613.717	109.156***
Wife's work time on weekdays (minutes)	360.000	840.000	530.112	65.402
Husband's annual real income at 2005 prices (¥10,000)	23.277	2629.017	552.175	221.976***
Wife's annual real income at 2005 prices (¥10,000)	9.737	3214.064	382.578	208.300
Wife's real income: ¥0–2,000,000 ($n = 135$)	9.737	199.586	133.973	49.515
Wife's real income: ¥2,000,000–3,999,999 ($n = 448$)	200.000	399.803	292.642	54.490
Wife's real income: ¥4,000,000–5,999,999 ($n = 277$)	400.000	599.210	486.822	56.019
Wife's real income: ¥6,000,000–7,999,999 ($n = 99$)	600.000	799.605	675.812	54.671
Wife's real income: ≥¥8,000,000 ($n = 23$)	800.000	3214.064	1075.921	486.312
Wife's RES	0.016	0.832	0.402	0.112
Husband's educational attainment	1.000	7.000	4.270	1.676
Wife's educational attainment	1.000	7.000	4.307	1.214
Husband's age	23.000	59.000	39.300	7.158***
Wife's age	25.000	49.000	37.126	6.081
Number of children	0.000	4.000	1.407	1.059
Dummy: no children living with couple	0.000	1.000	0.257	0.437
Dummy: youngest child is preschooler	0.000	1.000	0.263	0.440
Dummy: youngest child is elementary student	0.000	1.000	0.246	0.431
Dummy: husband's or wife's mother living with couple	0.000	1.000	0.378	0.485
Dummy: daughter aged ≥20 living with couple	0.000	1.000	0.045	0.207
Size of town	1.000	3.000	2.023	0.629

Note: ***represents statistically significant at 0.1%.

residing with them, and 4.6 percent have a daughter aged 20 or over living with them. The mean size of the residential district is 2.02.

Results

The results of the two models examined herein are presented in Table 2. The results of the Hausman test support the FE model for both models. First, wives' economic-exchange hypothesis is supported by Model I but rejected by Model II, and, second, in contrast to the results, the gender-display hypothesis is supported by Model II, which accounts for the level of wives' earnings. This finding implies that the housework behavior of high-earning wives in Japan is affected by the gender-display model. Third, Gupta's autonomy hypothesis is rejected by Model I. Last, Killewald and Gough's autonomy hypothesis is rejected by Model II (all the coefficients at the five income levels are positive). In Model II, all five variables for each interval of the spline function are positively related to wives' housework time, and four out of five are significant.

While wives' time spent on paid work is negatively related to their time spent on unpaid work, husbands' work time is positively and significantly related to wives' time on domestic chores (albeit showing a weak relationship in Model II). For both partners, educational attainment is negatively but insignificantly correlated to wives' time allocated to household chores. However, age and, unexpectedly, number of children do not significantly affect wives'

Table 2. Results of Models I and II.

	Model I						Model II					
	FE model			RE model			FE model			RE Model		
Independent variable	Coefficient	*t*-value		Coefficient	*t*-value		Coefficient	*t*-value		Coefficient	*t*-value	
Constant	580.335	4.376	***	401.512	7.636	***	655.619	4.660	***	463.107	7.880	***
Wife's RES	−346.889	−1.827	†	−107.774	−0.946	—	−1475.715	−4.470	***	−664.941	−3.080	**
Wife's RES^2	292.945	1.451	—	179.102	1.318	—	1131.789	4.200	***	643.324	3.360	***
Husband's annual real income	−0.049	−1.056	—	0.021	0.836	—	−0.225	−3.380	***	−0.046	−1.250	—
Wife's annual real income	0.037	0.941	—	−0.023	−0.824	—	—	—	—	—	—	—
Spline: Wife's real income ≤¥2,000,000	—	—	—	—	—	—	1.685	5.150	***	0.691	3.260	***
Spline: Wife's real income ¥2,000,000–3,999,999	—	—	—	—	—	—	0.242	1.760	†	0.048	0.560	—
Spline: Wife's real income ¥4,000,000–5,999,999	—	—	—	—	—	—	0.144	1.330	—	−0.011	−0.150	—
Spline: Wife's real income ¥6,000,000–7,999,999	—	—	—	—	—	—	0.242	1.840	†	0.081	0.770	—
Spline: Wife's real income ≥¥8,000,000	—	—	—	—	—	—	0.124	2.790	**	0.023	0.690	—
Husband's work time	0.070	1.814	†	0.042	1.473	–	0.058	1.510	—	0.038	1.340	—
Wife's work time	−0.185	−3.050	**	−0.266	−5.815	***	−0.189	−3.140	**	−0.258	−5.600	***
Husband's educational attainment	−28.339	−1.128	—	−2.282	−0.805	—	−21.339	−0.860	—	−2.604	−0.890	—
Wife's educational attainment	−17.695	−0.908	—	0.907	0.233	—	−22.148	−1.160	—	2.218	0.560	—
Husband's age	2.033	0.241	—	−2.587	−2.489	*	1.690	0.200	—	−3.024	−2.900	**
Wife's age	−2.828	−0.334	—	0.565	0.441	—	−2.003	−0.240	—	0.452	0.350	—
Number of children	6.481	0.824	—	−1.058	−0.216	—	5.233	0.660	—	−1.442	−0.280	—
No children living with couple	−114.182	−4.242	***	−88.029	−5.587	***	−140.881	−6.320	***	−106.361	−7.580	***
Youngest child is preschooler	49.035	2.787	**	48.408	4.043	***	26.628	2.290	*	31.255	3.500	***
Youngest child is elementary student	20.395	1.795	†	15.872	1.803	†	9.505	1.160	–	3.488	0.510	—
Mother living with couple	−44.570	−3.419	***	−24.974	−3.302	***	−42.618	−3.330	***	−25.562	−3.360	***
Daughter aged ≥20 living with couple	−5.154	−0.349	—	6.411	0.485	—	−9.080	−0.620	—	1.924	0.150	—
Size of town	4.463	0.313	—	7.956	1.322	—	−6.322	−0.450	—	7.321	1.200	—
R^2 within	0.219			0.198			0.250			0.219		
R^2 between	0.191			0.347			0.178			0.337		
R^2 overall	0.143			0.265			0.137			0.267		
Sample size	982			982			982			982		
Number of groups	348			348			348			348		
Hausman test: χ^2-value (Prob. < χ^2)	24.08 (0.0637)			†			37.91 (0.0025)			**		

Note: ***, **, *, and † represent statistically significant at 0.1%, 1%, 5%, and 10%, respectively.

time spent on domestic work. Nevertheless, the results state that childless wives spend significantly less time on household labor than wives who have children. Further, the youngest child being a preschooler or an elementary school student significantly raises wives' housework time, although the latter is not significant in Model II. Finally, if the husband's or wife's mother lives in the same house, this is negatively and significantly correlated with the wife's time allocated to unpaid work, while the presence of a daughter aged 20 or over is not significant. The positive association between size of district and wives' housework time is insignificant even at the 10 percent level.

Conclusion

This study adopted an identity economics framework in order to examine the housework behavior of Japanese wives of couples where both spouses work full-time, based on 2000–2008 JPSC panel data. Two equations were estimated to test the economic-exchange hypothesis, the gender-display hypothesis, and Gupta's and Killewald and Gough's autonomy hypotheses for wives, allowing us to highlight three main findings. First, in contrast to the predictions of standard economics, when wives' RES rises, they lose their gender identity causing them to trade their housework time with that of their husband in order to regain their lost gender identity and utility. This finding is consistent with those of Greenstein (2000) for the United States, Bittman et al. (2003) for Australia, Evertsson and Nermo (2004) for Sweden and the United States, and Ando (2011b, 2012–13a, 2012–13b) for Japan. Specifically, wives decrease their time spent on unpaid work until their RES rises to 65.2 percent; however, once their RES exceeds this share, they begin to increase it again.

Second, the autonomy hypotheses both of Gupta and of Killewald and Gough were rejected: Wives' absolute income does not have a negative relationship with their time spent on household activities. Rather, surprisingly and in contrast to the findings of previous studies, the existence of Japanese wives' earnings increases their time allocated to domestic work.[2]

Third, although wives' absolute income raises their housework time, the marginal increase in time spent on household chores diminishes as their level of marginal earnings increases. The theory of rational time allocation allows us to conclude that as their wage rate rises, wives allocate more time to market labor and less to household work, which enables them to earn enough to purchase substitutes in the market and lower the burden of domestic work; however, this was not shown to be the case with high-earning Japanese wives.

Specification checks were conducted by changing the sample restriction. These checks showed that the gender-display hypothesis holds when using JPSC 2005–2008 panel data and for wives working full-time irrespective of their husbands' employment status. However, this hypothesis does not hold

for wives working part-time, wives of couples where husbands work full-time and wives work part-time, and wives working part-time or full-time.[3] A specification check was also performed for Models I and II by using the squared term of husbands' RES measure and excluding the linear term of the measure and the spline functions from the two models, respectively. In Ando (2011b, 2012–13a, 2012–13b), gender display was found in the results of the model that excluded the linear term of husbands' RES from the gender-display model (Model I in the present study), but the hypothesis was not confirmed when only the squared term of the measure of husbands was used in the specification check.

All the presented findings suggest that it is too early to end the dispute over gender display in housework, even though skepticism about using multivariate analyses to examine the gender-display model have been expressed by Gupta (2007, 2009), Gupta and Ash (2008), Killewald and Gough (2010), and Sullivan (2011).

In contrast to conventional economic theories, identity economics explains the behavior of economic agents by incorporating identity into the utility function and assuming that agents lose identity when they choose actions contrary to the social behavioral norms assigned to their social categories and thereby experience cognitive dissonance. Indeed, the results in the present study firmly imply that the behavioral norm that "married women should not work full-time and earn as much as their husbands" still exists in Japanese society. Therefore, Japan should aim to change the behavioral norm to one that assumes that *married women may work full-time and earn as much as their husbands* in order to enable them to pursue a better work/life balance, one of the most important goals for the Japanese government.

Notes

1. The JPSC uses the terms "regular (worker)" and "irregular (worker)" in the survey. These are similar to "full-time (worker)" and "part-time (worker)," respectively. This study, following previous works, uses the latter terms.
2. This finding might arise for four reasons, First, because Japanese houses are smaller than those in the United States and European countries, and because of the efficiency of modern cleaning products, Japanese wives rarely outsource home-cleaning. Second, although wives in Japan make use of prepared food at home (e.g., bought from a delicatessen, frozen food, box lunches), this is not a complete substitute for preparing home-cooked dishes and, rather, requires them to provide freshly prepared food as a complement. Third, according to the Statistics Bureau of Japan, fewer than 20 percent of Japanese households own an electric dishwasher (only rising to 30 percent for the highest-income households). Finally, the deflation and stagnation in real income in the past decade in Japan have prevented even high-earning wives from outsourcing housework in order to reduce household expenditure.
3. The empirical results are available from the author upon request.

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